For Information on
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LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS

Progress of Measures to Improve Air Quality, Including Those Taken by the Two Power Companies to Meet the Government's Emissions Reduction Targets by 2010

Purpose

This paper reports to Members the latest progress of measures to improve air quality, including those taken by the two power companies, to meet the Government's emissions reduction targets by 2010.

Background

2. To improve regional air quality, the Hong Kong Special Administrative Region (SAR) Government reached a consensus with the Guangdong Provincial Government in April 2002 to reduce, on a best endeavour basis, the emission of four major air pollutants, namely sulphur dioxide (SO_2), nitrogen oxides (NO_x), respirable suspended particulates (RSP) and volatile organic compounds (VOCs) by 40%, 20%, 55% and 55% respectively in the region by 2010, using 1997 as the base year. Achieving these targets will not only enable Hong Kong to meet its air quality objectives (AQOs), but also significantly improve the air quality of the Pearl River Delta (PRD) and relieve the regional smog problem.

3. On 29 September 2005, we informed Members of the progress of measures being pursued by both sides for meeting the 2010 emissions reduction targets. At the meeting, Members requested the Administration to provide six-monthly reports on the progress of the 2010 emissions reduction targets and measures taken by the two power companies to meet the targets.

4. Subsequently, the Administration provided its progress reports to Members in January and August 2006 respectively. This paper is the third progress report.

Progress of Reducing Emissions In Hong Kong

Progress of Emissions Reduction

5. We are making good progress in local emissions reduction measures. Apart from SO_2, whose emission level has increased due to power generation, the emission levels of all other pollutants have been on the decrease when compared with those in 1997. Generally speaking, 2005 showed further improvements over 2004. Details are as follows:

	Emission Level in 1997 (tonnes)	**Changes in Emission Level during 1997-2004**	**Changes in Emission Level during 1997-2005**	**Emissions Reduction Targets for 2010**
SO_2	64,500	+47%	+31%	-40%
NO_x	110,000	-16%	-15%	-20%
RSP	11,200	-28%	-36%	-55%
VOCs	54,400	-23%	-26%	-55%

Specific Measures

6. To step up local efforts in emissions reduction, the Chief Executive announced a series of initiatives in his 2006 Policy Address:

(a) We will launch a one-off $3.2 billion grant scheme from 1 April 2007 to provide incentives for the early replacement of pre-Euro and Euro I commercial diesel vehicles, totalling about 74,000, with Euro IV models, within 18 months and 36 months respectively. The replacement programme will reduce 10% of NOx and 18% of RSP of our total local emissions.

(b) With effect from 1 April 2007, we will encourage the use of environment friendly private cars through a 30% reduction in their First Registration Tax, subject to a cap of $50,000 per vehicle.

(c) We plan to consult the public in early 2007 on whether legislation should be enacted to ban idling vehicles while waiting.

7. Apart from the above, the Environmental Protection Department (EPD) announced in July 2006 to conduct a detailed study to review Hong Kong's AQOs. In its study, the EPD will draw up various recommendations and implementation strategies by making reference to the new Air Quality Guidelines (AQGs) of the World Health Organization (WHO) as well as the recent research findings in air quality in the US and the European Union (EU). We will also develop a comprehensive, proactive and pragmatic air quality management strategy through public consultation and set appropriate interim and long-term targets in line with the broad direction of tightening the air quality standards.

8. It must be pointed out that the WHO recognized that the actual air quality standards set in each country will vary according to the approach adopted for balancing health risks, technological feasibility, economic considerations and various other political and social factors. It also advises that governments should consider their own local circumstances carefully before fully adopting the new AQGs as statutory standards. In our study, the Government will devise various options and conduct analyses on their economic effectiveness, social impact, technological sophistication, the time required for introducing the measures, the need to co-operate with the Mainland and the compatibility with other policy areas including energy, transportation, industrial production, urban planning and conservation.

9. Power generation is the biggest local source of SO_2 emission. We have therefore imposed emission caps on power plants. These emission caps will be progressively tightened to ensure that Hong Kong can meet the 2010 emissions reduction targets. The Chief Executive stressed in his Policy Address that we should not allow these firm targets to be compromised in any way. We have also made clear that the need to protect our environment will be the focus of the post-2008 Schemes of Control in our negotiations with the power companies. Their permitted rate of return will be linked to their achievement of the emission caps.

10. The latest progress on emissions reduction achieved by the power sector is as follows:

(a) On retrofit projects, Environmental Permits were granted to China Light & Power (CLP) for its flue gas desulphurisation (FGD) system and selective catalytic reduction retrofit projects in November 2006;

(b) On the wider use of natural gas, the first gas-fired generation unit (L9) of Hong Kong Electric was officially commissioned in October 2006. The CLP has submitted the Environmental Impact Assessment (EIA) report for its proposed liquefied natural gas receiving terminal. The

EPD, having carefully examined the report in conjunction with other competent authorities and consulted the relevant authorities, decided on 15 December 2006 that the report met the requirements of the EIA study brief and the Technical Memorandum on Environmental Impact Assessment Process and should be exhibited for public inspection; and

(c) On promoting renewable energy, the CLP submitted the EIA report for its commercial scale wind turbine pilot demonstration at Hei Ling Chau in November 2006. The construction of its first commercial scale wind turbine power station is expected to complete in 2008. The EPD, having carefully examined the EIA report in conjunction with other competent authorities, decided on 1 December 2006 that the report should be exhibited for public inspection.

11. The following progress has also been made –

(a) The statutory requirement of compliance with Euro IV emission standards has been extended to newly registered heavy vehicles (over 3.5 tonnes in weight). The tightened emission requirements came into force in October 2006;

(b) The requirement of mandatory installation of emission reduction devices will be extended to pre-Euro long-idling diesel vehicles with effect from 1 April 2007; and

(c) A draft regulation was submitted to the Legislative Council in November 2006 to introduce limits on the VOC contents of paints, printing inks and selected consumer products, and to make the installation of emission reduction device in certain printing process mandatory. Subject to the vetting by the Council, the new regulation will be implemented in phases starting from 1 April 2007.

Co-operation with the Mainland

12. A close partnership with the Mainland authorities is crucial to achieving the 2010 emissions reduction targets. The latest progress of the Hong Kong SAR Government and the Guangdong Provincial Government in implementing enhanced control measures under the Pearl River Delta Regional Air Quality Management Plan (the Management Plan) is set out in **Tables 1 - 4**.

13. During its seventh meeting held on 18 December 2006, the Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection endorsed the Implementation Framework of the Emission Trading Pilot Scheme for Thermal Power Plants in the PRD Region.

The Implementation Framework will be announced as soon as the relevant procedures have been completed.

14. On 31 October 2006, the two sides announced the first half-yearly report on the monitoring results of the PRD Regional Air Quality Monitoring Network. A mid-term review of the Management Plan started in November 2006 to assess the effectiveness of various emission reduction measures as well as the emission trends in the region, and to formulate appropriate strategies and enhanced control measures with a view to achieving the 2010 emissions reduction targets.

15. In 2007, both governments will continue to make their best efforts to implement and enhance the various control measures under the Management Plan. Major tasks include –

(a) proactively improving energy supply structure, and speeding up the installation of FGD systems to thermal power plants;

(b) further tightening emissions from motor vehicles;

(c) jointly analysing the data collected by the PRD Regional Air Quality Monitoring Network; releasing the 2006 regional air quality monitoring report in April 2007 to provide the public with more information on the air quality in the PRD;

(d) completing the mid-term review of the Management Plan according to schedule, and striving to meet the 2010 emissions reduction targets as agreed by both sides; and

(e) setting up the Hong Kong-Guangdong Emission Trading Management Panel as soon as possible to promote the Emission Trading Pilot Scheme for Thermal Power Plants in the PRD Region for participation by power plants in the region on a voluntary basis. Utilising the flexibility of emission trading, agreements meeting the interests of various parties could be drawn up to reduce emission of air pollutants in the region.

Environmental Protection Department
January 2007

Table 1

Pearl River Delta Regional Air Quality Management Plan

Enhanced Control Measures of the HKSAR

Measures	Implementation Programme	Progress (Up to 30.11.2006)
Encourage the replacement of diesel light buses with ones using clean fuel (already commenced)	Since 2002, the Government has offered incentives to diesel light bus owners to encourage replacement of diesel light buses with liquefied petroleum gas (LPG) or electric ones.	The incentive scheme was introduced in August 2002 and completed by 31 December 2005. Up to end of October 2006, there were a total of 2 436 public LPG light buses, 151 private LPG light buses and one electric light bus. Between January 2006 and the end of October 2006, around 80% of the newly registered public light buses were LPG models.
Require the retrofitting of particulate removal devices on pre-Euro diesel vehicles (already commenced)	Since 2002, financial assistance has been provided for retrofitting pre-Euro heavy diesel vehicles with particulate removal devices.	Financial assistance was provided in phases from December 2002 to December 2005 to retrofit pre-Euro heavy diesel vehicles with catalytic converters. All together, about 36 500 eligible vehicles were installed with catalytic converters. Since April 2006, all pre-Euro heavy diesel vehicles (including franchised buses), except long-idling ones were required to be installed with approved emission reduction devices. Legislative amendments will be introduced to require emission reduction devices to be installed on pre-Euro heavy diesel vehicles under long idling situations (including lorries with cranes mounted, concrete mixers, pressure tankers and gully emptiers) with effect from April 2007.

Measures	Implementation Programme	Progress (Up to 30.11.2006)
Encourage vehicle owners to replace pre-Euro and Euro I commercial diesel vehicles with Euro IV models	(New item included in December 2006) A financial incentive scheme will be introduced in the second quarter of 2007	Preparation work underway
Encourage members of the public to use environmentally friendly private vehicles	(New item included in December 2006) With effect from 1 April 2007, a 30% reduction in the First Registration Tax will be offered, subject to a cap of $50,000 per vehicle	Preparation work underway
Enhance the vapour recovery systems in petrol filling stations	To introduce legislation requiring the recovery of petrol vapour emitted during vehicle refueling at petrol filling stations was in 2003/04.	The Regulation came into effect on 31 March 2005.
Tighten motor fuel standard	Motor fuel standard will be tightened to Euro IV standard by 2005 (motor diesel standard has already been tightened to Euro IV standard since 2002).	Euro IV petrol standard came into effect on 1 January 2005.
Tighten tailpipe emission standard	To adopt Euro IV standard for tailpipe emissions from 2006.	Euro IV tailpipe emission standard was introduced on 1 January and 1 October2006 respectively for light-duty vehicles not exceeding 2.5 tonnes and heavy-duty vehicles exceeding 3.5 tonnes.

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	(New item included in December 2005) To be in line with EU in adopting Euro V motor vehicles standard for tailpipe emissions.	Planned to be in line with EU to adopt Euro V standard for tailpipe emissions.
Reduce VOC emissions from the printing process, paints and consumer products	To introduce legislation in 2004 or 2005 to require labeling of VOC content in VOC products. Legislation will then be introduced in phases to reduce the use of products with high VOC contents and to impose emission standards for the printing process.	During the public consultation held in September 2004 and subsequent discussions with stakeholders, members of the trade generally agreed to advance Phase II measures and impose limits and technical requirements on the VOC content of VOC products at an earlier date. The Government tabled the legislation at LegCo in November 2006, which started the enactment of the regulation on controlling VOC-containing products. It is expected that all VOC-containing products under control will be subject to the statutory limits in phases with effect from April 2007 onwards. Emission control devices must be properly installed on lithographic heatset printing machines starting from 1 January 2009, to meet the new legislative requirements.
Reduce emissions from power stations	Effective and flexible mechanisms (which may include emissions trading) will be set up to control the total emissions of SO_2, NOx and RSP from power stations to achieve	The Government approved the emissions reduction options set out in the financial plans of the two power companies in June 2005. CLP Power Hong Kong Limited will provide desulphurization and de-NOx systems for four of its coal-fired generating units each of 677MW. Hong Kong Electric Co. Ltd. will

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	respective reduction targets by 2010.	provide low-NOx burners and desulphurization systems for two of its coal-fired generating units each of 350MW. CLP has been increasing the use of ultra low sulphur coal and is seeking to increase natural gas supply through the development of liquefied natural gas reception facilities. HEC has formally commissioned its first natural gas generation unit of 335MW in October 2006. The first commercial scale wind turbine power generation unit of 800kW was also commissioned in Hong Kong in February 2006.
	(New item included in December 2005) Control total emissions from power plants.	Emission caps have been included in the SPLs granted to CLP's Castle Peak Power Station and Black Point Power Station as well as HEC's Lamma Power Station. Emission caps will gradually be tightened, with a view to reducing emissions to the practical minimum and achieving the 2010 reduction targets.

Table 2

Pearl River Delta Regional Air Quality Management Plan
Enhanced Control Measures of the Guangdong Provincial Government

Measures	Implementation Programme	Progress (Up to 30.11.2006)
Use cleaner energy	To reduce gradually the energy consumption per 10000 Yuan GDP. To establish by 2010 a diversified energy production and supply system that is safe, stable, economical, efficient and clean.	The 500KV grid for transmitting electricity from the western provinces was completed on schedule. The Guangdong Liquefied Natural Gas (LNG) Project is being constructed according to plan. The construction of a number of major electric power sources and clean energy programmes is being speeded up. To reduce reliance on more polluting fuel like coal and oil, Guangdong is developing two new natural gas projects apart from the Guangdong LNG Project – (a) CNOOC Zhuhai Natural Gas Pipeline Project, with a capacity of about 1.19 million tonnes/year, has utilized natural gas from the South China Sea since February 2006; and (b) Zhuhai LNG Receiving Station Project, with a capacity of 3 million tonnes/year for Phase I, is expected to be commissioned partially by 2010. Zhongshan Hengmen Power Plant and Zhuhai Hongwan Power Plant have been converted to use natural gas as fuel since February 2006.

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	To construct natural gas trunk pipeline and the associated works. To complete Phase I in 2005 that will have a capacity of 3 million tonnes/year. In 2009, to complete Phase II that will increase the total capacity to 6 million tonnes/year and finish construction of a number of natural gas power plants.	The capacity of Guangdong LNG Project Phase I has been expanded from 3 million tonnes/year to 3.7 million tonnes/year and gas supply was started in mid 2006. The total capacity for Phase II will be expanded to 7 million tonnes/year. Among the four newly built natural gas power plants, the ones in Huizhou and Shenzhen East have generating units commissioned in September and November 2006. Other generating units will be commissioned in phases later this year. Residents in Shenzhen, Guangzhou, Dongguan and Foshan can also use natural gas supplied through pipeline network.
	To improve by 2005 the 500KV dual circuit annular core transmission grid to ensure transmission of electricity from western provinces.	The 5 AC and 3 DC main transmission channels from western provinces have been completed.
	(New item included in December 2006) To rationalize the distribution of new power stations. Apart from proper construction of generating units for combined heat and power supply and those thermal power plant projects which have been reported to the State for planning and building, no more new coal-fired and oil-fired power plants will be planned for building in	Being implemented

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	the PRD region.	
	(New item included in December 2006) To gradually enlarge the scale of electricity transmission from western provinces to Guangdong	
Control the sulphur content of fuel	To control the use of high sulphur fuel (sulphur content of coal and fuel oil should be below 0.8% in the acid rain control zone by 2005).	Being implemented. By 2010, enterprises which have not installed desulphurization system would have their fuel sulphur content controlled at below 0.7% for coal and below 0.8% for fuel oil. Those not meeting the limits would need to use sulphur fixing agents or sulphur removal agents.
Reduce emissions from coal-fired and oil-fired power stations	To phase out small-scale thermal power generating units. Power plants with a capacity equal or above 300MW to account for over 70% of the total installed capacity in the region in 2005, which is 35% higher than that in 2000.	All regular coal-fired and oil-fired small thermal power generating units with capacities equal or below 50MW is expected to be phased out by end 2007. About 240 generating units with a total capacity of 2 500 MW are involved.
	To install flue gas desulphurization systems at the power plants in Shajiao, Huangpu, Taishan and Zhuhai by 2005.	Flue gas desulphurization systems have already been installed (including works pending official check and acceptance) for generating units with a capacity of around 11,000 MW, thereby reducing the annual SO_2 emission by more than 160,000 tonnes. In addition, generating units of around 4,000 MW are being retrofitted with this system. (Table 3 and Table 4)
	To require all oil-fired and coal-fired generating units of capacity above 125MW to be equipped with flue gas desulphurization systems by 2007.	
	(New item included in December	Low-NO_X combustion technologies have

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	2005) To require all coal-fired and oil-fired power plants to adopt low-NOx combustion technologies in case of alteration or expansion.	already been required at all units in case of alteration or expansion.
	(New item included in December 2006) To promote the installation of low-NOx combustion device at existing coal-fired and oil-fired power plants.	
	(New item included in December 2006) To require all power plants under construction, alteration or expansion to install desulphurization equipment, particulate removal devices and automatic continuous emissions monitoring system.	
	(New item included in December 2006) To enhance technological improvements of existing power plants and to implement cleaner production. Newly built power plants have to meet the advanced standard on cleaner production in the country.	
	(New item included in December 2006) To materialize the subsidization	From 1 July 2006, power plants with desulphurization system receive an extra RMB 1.5 cents per unit when the

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	policy for thermal power plants to desulphurize by giving concessions, support and assistance in land acquisition for desulphurization systems and import of essential equipment so as to facilitate the full implementation of desulphurization projects.	electricity is sold to the power grid.
	(New item included in December 2006) To establish a province-wide quota administration system for total emissions of sulphur dioxide and to study the emissions trading mechanism of sulphur dioxide.	
Control emissions from industrial boilers and industrial processes	To phase out coal-fired boilers with a capacity of less than 2 tonnes/hour in the urban areas of cities. By 2005, to stop using such coal-fired boilers in build-up areas of key cities. To require all large and medium-size industrial boilers to install desulphurization systems or adopt clean combustion technologies to reduce emissions.	The operation of coal-fired boilers of less than 2 tonnes/hour has been largely phased out in the urban areas of cities in the region. Removal devices for particulates must be installed onto all industrial boilers. Restaurants located in sensitive areas and restaurants the operation of which would seriously affect public production must be installed with devices to purify cooking fumes.
	To continue phasing out various production technologies and installations that have caused serious pollution by emitting sulphur dioxide, smoke and particulates.	To implement on a mandatory basis a system to phase out enterprises, various production technologies and installations that have caused serious pollution. No construction of new cement plants and

Measures	Implementation Programme	Progress (Up to 30.11.2006)
		extension of cement plants will be planned in the PRD Region. Future development will focus on projects of new dry-type cement plant with daily production capacity of more than 4 000 tonnes. Projects of new dry-type rotary kiln cement plant with daily capacity of 2 500 tonnes and below will be prohibited. Programmes are being implemented to phase out high energy consuming and highly polluting cement plants, production lines of vertical kilns, dry hollow kilns, Lepol kilns and wet process kilns. The relocation project of Guangzhou Cement Plant, completed by end 2005, was estimated to reduce particulate emissions in the Region by approximately 3 000 tonnes/year.
	(New item included in December 2005) To actively study the technologies for controlling emission of nitrogen oxides from stationary sources such as power plant boilers, industrial boilers and restaurant boiling water furnaces.	Emission of nitrogen oxides from stationary sources such as electricity station boilers, industrial boilers and restaurant boiling water furnaces will be under control in 2010.
	(New item included in December 2006) Location and planning of industries causing serious pollution will be strictly determined and administered	

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	centrally. The system of environmental assessment of construction projects will be enhanced.	
	(New item included in December 2006) For industrial sectors such as petrochemicals, steel, non-metallic mineral products, paper and paper products, textile and dyeing, technological improvement at existing enterprises will be enhanced and cleaner production will be implemented. New porjects have to meet the advanced standard on cleaner production in the country.	
	(New item included in December 2006) Initiate vapour recovery at petrol filling stations, tanker trucks and oil depots	<u>Shenzhen</u> – To begin survey and investigation and formulate working plan for implementation in phases a pilot scheme at selected locations before the end of 2006.
Reduce the emission of VOC from paints	To replace by 2003 paints using VOCs with xylene as the main solvent.	Work completed.
Reduce tailpipe emissions from motor vehicles	To commence the construction of a regional rapid light-rail system by 2005. To construct expressways in major cities, such as the district expressway in Southern Guangzhou and the Shenzhen-Shenping Express Trunk Road.	Phase I of Shenzhen-Shenping Express was completed in 2005. The whole expressway is expected to be commissioned in 2006. Rail system between Guangzhou and Zhuhai started construction in December 2005. The system, 144km in length with

Measures	Implementation Programme	Progress (Up to 30.11.2006)
		a maximum speed of 200km/hr, is expected to be completed by 2009.
	To develop green transport by implementing clean vehicle action programmes in major cities of the region. To encourage the use of clean fuels, develop electric vehicles, actively promote the use of advanced clean fuel motor vehicles and step up the development of public transport.	<u>Shenzhen</u> - Formulated the "Medium to Long Term Planning for the Development of Clean Vehicles in Shenzhen". - Drew up and implemented the 2003-2008 general work programme for the use of clean fuel in public transport vehicles. - In accordance with "The scheme of providing financial subsidy to replace public transport vehicles with Euro III emissions standards in the City of Shenzhen in advance of the schedule", the work to encourage public transport enterprises to replace public transport vehicles with National III Emissions Standards has been actively pursued. As at October, there are 5 671 public transport vehicles complying with National III emissions standards, 4 423 of which are newly added vehicles or vehicles replaced with those complying with National III emissions standards. The remaining 1 248 vehicles have been replaced with engines complying with National III emissions standards. - The replacement of in-service public transport vehicles with National III

Measures	Implementation Programme	Progress (Up to 30.11.2006)
		emissions standards will be completed by the end of 2006 ahead of schedule. <u>Guangzhou</u> - Active promotion of LPG public buses and taxis. By the end of 2005, all modification and replacement programmes had been completed for state-owned public transport companies. By the end of 2006, all public buses and taxis are expected to use LPG. - As at November 2006, there are 6 400 LPG-driven public buses in Guangzhou, which accounts for 80% of all public buses in the city. With the exception of a small number of vehicles the service of which is due to expire, most of the 16 000 taxis in the city have by and large completed the LPG modification. - There are 26 LPG refilling stations in the city at the present and two more will be added by the end of the year, boosting the total to 28.
	To require all new motor vehicles to fully meet emission standards. To step up annual inspection and on-road spot checks of in-use vehicles. To strengthen the control of in-use vehicles to ensure that over 90% of motor vehicles in the cities	National II emission standards have been adopted since 1 July 2005. A recommended catalogue of motor vehicles complying with National III emission standards has been introduced in 1 July 2005, to encourage and support sale, import, purchase and use of motor vehicles

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	within the region will meet tailpipe emission standards by 2005.	on the catalogue Striving to adopt National III emission standards by end-2006. <u>Guangzhou</u> - The requirement for all newly registered vehicles to comply with the National III emission standards has been advanced to 1 September 2006. - Improvement is being made to the measures on roadside inspection and random check of vehicles with excessive emissions. <u>Shenzhen</u> - All newly registered public transport vehicles are required to comply with National III emission standards. - A reporting and joint investigation system for smoky vehicles is established. - 30 000 roadside inspections would be carried out by end-2006.
	(New item included in December 2005) To study the feasibility of advancing the implementation of National IV emission standards for light-duty vehicles by 2010. To study the feasibility of advancing the implementation of National V emission standards for heavy-duty vehicles by 2010.	Preparatory work is being conducted.

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	(New item included in December 2005) To strengthen management on regular inspections of in-use motor vehicles to make sure that the required environmental performance is met.	The in-use motor vehicles inspection / maintenance system is progressively implemented and improved. Non-compliance motor vehicles are prohibited from using the roads. <u>Shenzhen</u> - A system of inspection / maintenance is introduced. <u>Guangzhou</u> - To implement the in-use vehicles emission standards and to introduce the cycle test for motor vehicles by phases by 2007. - To establish a database for motor vehicles emissions control management for strengthening controls on motor vehicle testing industry. - To implement a phase out programme for highly polluting motor vehicles.
	(New item included in December 2006) To experiment a labeling system on the environmental categorization of in-use vehicles in key cities, and to regulate and restrict vehicles of certain categories using the road according to the ambient air quality.	<u>Shenzhen</u> – A labeling system on the environmental categorization of motor vehicles is introduced. <u>Guangzhou</u> – A labeling system on the environmental categorization of motor vehicles will be introduced in 2007.
	(New item included in December 2006) To vigorously promote the sale of motor vehicle fuel complying with	Guangdong Province has already announced the local National III standards for motor fuel in August 2006. The extension and reconstruction project

Measures	Implementation Programme	Progress (Up to 30.11.2006)
	National III standard in the province.	of Guangzhou Sub-company, Sinopec was commissioned in 9 September 2006. The company is now capable of producing motor fuel complying with National III standard. Guangzhou – Motor fuel complying with National III standard is now provided in 41 petrol filling stations within the city, and such fuel supply will extend to all petrol filling stations in the city in 2007. Shenzhen – Motor diesel with sulphur content below 500 ppm is introduced and all public transport vehicles are required to use such type of diesel.
	(New item included in December 2006) To study ways to control the growth of motorcycles in key cities.	Guangzhou – Motorcycles are prohibited from using certain road sections in the urban areas. Starting from 1 January 2007, all motorcycles will be banned from the urban areas.

Table 3

Progress on Desulphurization Projects at Large Scale Coal-fired and Oil-fired Thermal Power Plants in the PRD Economic Zone

(as at 30 Nov 2006)

Project	Desulphurization Capacity(MW)	Estimated Year of Completion
Projects completed and put into operation before 2003		
Mawan Power Plant (Unit 4)	300	
Ruiming Power Plant	250	
Hengyun Power Plant (Unit 3-5 and Unit 7)	360	
Guangzhou Papermaking Plant	100	
New projects completed under the Implementation Scheme of Desulphurization of Coal-fired and Oil-fired Thermal Power Plants in Guangdong Province[1]		
Mawan Power Plant (Units 5 and 6)	600	
Hengyun Power Plant (Unit 6)	210	
Taishan Power Plant (Units 1 and 2)	1200	
Shajiao Power Plant A (Units 3 to 5)	800	
Shajiao Power Plant C (Units 1 to 3)	1980	
Huangpu Power Plant (Units 5 and 6)	600	
Guangzhou Zhujiang Power Plant (Units 1 and 2)	600	
Guangzhou Power Plant	200	
Yuancun Power Plant	100	
Jiangmen Sugar Cane Chemical Factory	35	
Mawan Power Plant (Unit 3)	300	
Zhuhai Power Plant (Units 1 and 2)	1400	
New projects to be completed under the Implementation Scheme of Desulphurization of Coal-fired and Oil-fired Thermal Power Plants in Guangdong Province		
Shajiao Power Plant A (Units 1 and 2)	400	2006
Shajiao Power Plant B	700	2007

[1] including projects pending official check and acceptance

Project	Desulphurization Capacity(MW)	Estimated Year of Completion
Mawan Power Plant (Units 1 and 2)	600	2007
Nanhai Power Plant A[2]	400	2007
Guangzhou Zhujiang Power Plant (Units 3 and 4)	600	2007
New Power Plants in Operation with Duly Equipped Desulphurization Systems		
Xinhui Shuangshui Power Plant (Units 5 and 6)[3]	300	
Taishan Power Plant (Units 3 to 5)	1800	
New Power Plants to be in Operation with Duly Equipped Desulphurization Systems		
Zhuhai Power Plant (Units 3 and 4)	1200	2007

[2] Switch from oil to coal-water mixture as fuel
[3] Using circular fluidized bed units

Table 4

Desulphurization Capacity and Estimated Emissions Reduction of the Desulphurization Projects at Large Scale Coal-fired and Oil-fired Thermal Power Plants in the PRD Economic Zone

	Desulphurization Capacity (MW)	**Estimated Reduction in Emissions (tonnes/year)**
Projects completed (as at 30 Nov 2006)	11,135	162,090#
Projects to be completed by 2007	3,900	46,500#
Projects in total	15,035	208,590#

excluding projects for which collection of data is underway